2020 Fall Math 229 Exam 1 - Due 11.8

Archer Hernandez,Sean L.

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

8.0000 11.5000 15.0000
```

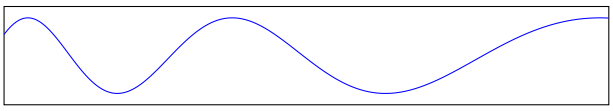
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

8.0000 11.5000 15.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [8,15]

$$y = \sin^2 \frac{117}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                              ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 117 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6413 + 1.1530i
1.6413 - 1.1530i
-0.5579 + 1.8659i
-0.5579 - 1.8659i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{117 \arccos x}{100\sqrt{1-x}}$$

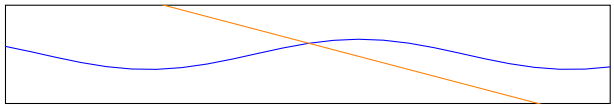
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.668738252963938
0.990000000000000 1.656011837895798
0.999000000000000 1.654767784832399
0.999900000000000 1.654643656869007
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 117$$

over the interval [15,18] on the same graph.

```
>> x = linspace(15,18);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 117$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{117}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{117}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.775510204081641
0.010000000000000 -4.689378757515072
0.001000000000000 -4.680936187241968
0.000100000000000 -4.680093601869827
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Belli,Erenik

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 8.5000 10.0000 11.5000 13.0000
```

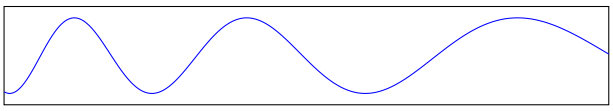
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

7.0000 8.5000 10.0000 11.5000 13.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,13]

$$y = \sin^2 \frac{133}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 133 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6825 + 1.1830i
1.6825 - 1.1830i
-0.5737 + 1.9145i
-0.5737 - 1.9145i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{133 \arccos x}{100\sqrt{1-x}}$$

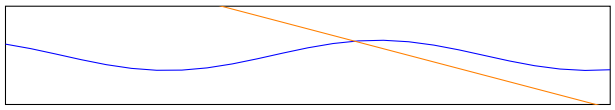
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.896941774736784
0.990000000000000 1.882474995214882
0.999000000000000 1.881060815236830
0.999900000000000 1.880919712509213
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 133$$

over the interval [17,20] on the same graph.

```
>> x = linspace(17,20);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 133$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{133}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{133}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.428571428571409
0.010000000000000 -5.330661322645013
0.001000000000000 -5.321064212843395
0.000100000000000 -5.320106402102453
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Calaguas,Isah

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 10.5000 12.0000
```

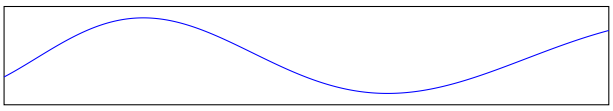
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

9.0000 10.5000 12.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,12]

$$y = \sin^2 \frac{137}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 137 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6922 + 1.1901i
1.6922 - 1.1901i
-0.5773 + 1.9259i
-0.5773 - 1.9259i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{137 \arccos x}{100\sqrt{1-x}}$$

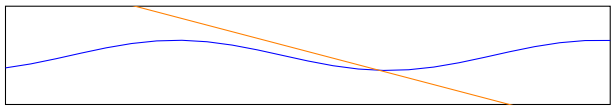
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.953992655179996
0.990000000000000 1.939090784544653
0.999000000000000 1.937634072837937
0.999900000000000 1.937488726419264
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 137$$

over the interval [18,21] on the same graph.

```
>> x = linspace(18,21);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 137$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{137}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{137}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.591836734693878
0.010000000000000 -5.490981963927765
0.001000000000000 -5.481096219245528
0.000100000000000 -5.480109602196136
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Checchi,David

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 11.0000 18.0000
```

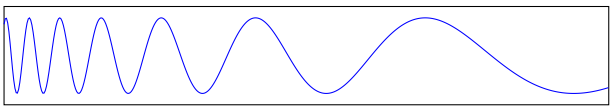
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 11.0000 18.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,18]

$$y = \sin^2 \frac{108}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 108 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6161 + 1.1346i
1.6161 - 1.1346i
-0.5483 + 1.8362i
-0.5483 - 1.8362i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{108 \arccos x}{100\sqrt{1-x}}$$

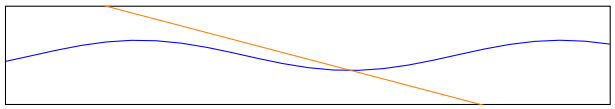
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.540373771966712
0.990000000000000 1.528626311903814
0.999000000000000 1.527477955229907
0.999900000000000 1.527363375571391
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 108$$

over the interval [14,17] on the same graph.

```
>> x = linspace(14,17);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 108$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{108}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{108}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.408163265306086
0.010000000000000 -4.328657314628969
0.001000000000000 -4.320864172836280
0.000100000000000 -4.320086401712330
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Chen,Haoying

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 7.2000 9.4000 11.6000 13.8000 16.0000
```

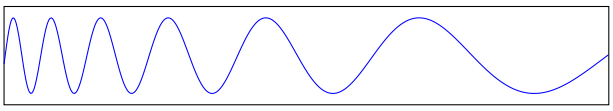
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

5.0000 7.2000 9.4000 11.6000 13.8000 16.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,16]

$$y = \sin^2 \frac{138}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 138 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6946 + 1.1918i
1.6946 - 1.1918i
-0.5783 + 1.9287i
-0.5783 - 1.9287i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{138 \arccos x}{100\sqrt{1-x}}$$

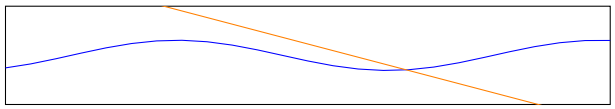
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.968255375290799
0.990000000000000 1.953244731877096
0.999000000000000 1.951777387238214
0.999900000000000 1.951630979896777
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 138$$

over the interval [18,21] on the same graph.

```
>> x = linspace(18,21);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 138$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{138}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{138}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.632653061224460
0.010000000000000 -5.531062124248364
0.001000000000000 -5.521104220843397
0.000100000000000 -5.520110402166266
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Fazio,Greg T

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 7.5000 10.0000 12.5000 15.0000
```

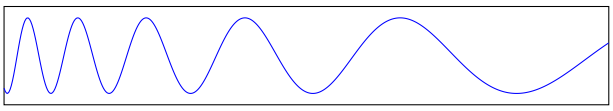
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

5.0000 7.5000 10.0000 12.5000 15.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,15]

$$y = \sin^2 \frac{127}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 127 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6676 + 1.1721i
1.6676 - 1.1721i
-0.5679 + 1.8968i
-0.5679 - 1.8968i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{127 \arccos x}{100\sqrt{1-x}}$$

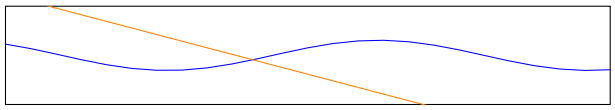
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.811365454071967
0.990000000000000 1.797551311220226
0.999000000000000 1.796200928835168
0.999900000000000 1.796066191644135
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 127$$

over the interval [17,20] on the same graph.

```
>> x = linspace(17,20);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 127$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{127}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{127}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.183673469387742
0.010000000000000 -5.090180360721418
0.001000000000000 -5.081016203245524
0.000100000000000 -5.080101602032982
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Ganaway,Reese A

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 11.5000 19.0000
```

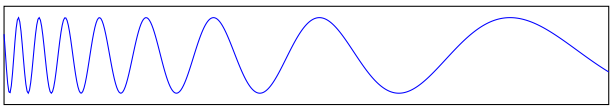
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 11.5000 19.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,19]

$$y = \sin^2 \frac{130}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 130 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6751 + 1.1776i
1.6751 - 1.1776i
-0.5708 + 1.9057i
-0.5708 - 1.9057i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{130 \arccos x}{100\sqrt{1-x}}$$

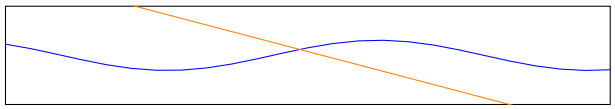
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.854153614404375
0.990000000000000 1.840013153217554
0.999000000000000 1.838630872035999
0.999900000000000 1.838492952076674
0.999990000000000                   
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 130$$

over the interval [17,20] on the same graph.

```
>> x = linspace(17,20);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 130$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{130}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{130}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.306122448979558
0.010000000000000 -5.210420841683216
0.001000000000000 -5.201040208042683
0.000100000000000 -5.200104002085481
0.000010000000000                   
```

2020 Fall Math 229 Exam 1 - Due 11.8

Gavilanes,Anthony Brando

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 8.6000 10.2000 11.8000 13.4000 15.0000
```

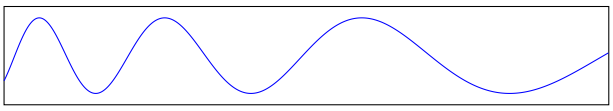
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

7.0000 8.6000 10.2000 11.8000 13.4000 15.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,15]

$$y = \sin^2 \frac{129}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 129 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6726 + 1.1758i
1.6726 - 1.1758i
-0.5699 + 1.9028i
-0.5699 - 1.9028i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{129 \arccos x}{100\sqrt{1-x}}$$

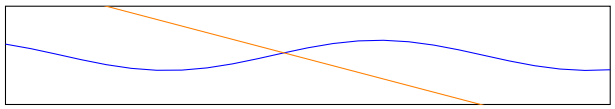
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.839890894293573
0.990000000000000 1.825859205885111
0.999000000000000 1.824487557635722
0.999900000000000 1.824350698599161
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 129$$

over the interval [17,20] on the same graph.

```
>> x = linspace(17,20);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 129$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{129}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{129}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.265306122448941
0.010000000000000 -5.170340681362616
0.001000000000000 -5.161032206441262
0.000100000000000 -5.160103202044296
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Jaundoo,Martin Aaron

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 8.0000 12.0000
```

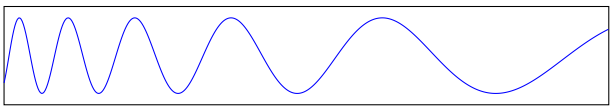
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 8.0000 12.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,12]

$$y = \sin^2 \frac{99}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 99 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5892 + 1.1150i
1.5892 - 1.1150i
-0.5380 + 1.8044i
-0.5380 - 1.8044i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{99 \arccos x}{100\sqrt{1-x}}$$

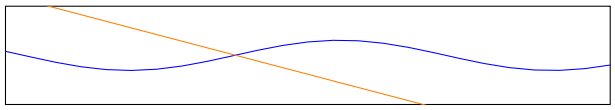
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.412009290969486
0.990000000000000 1.401240785911829
0.999000000000000 1.400188125627415
0.999900000000000 1.400083094273775
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 99$$

over the interval [13,16] on the same graph.

```
>> x = linspace(13,16);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 99$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{99}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{99}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.040816326530603
0.010000000000000 -3.967935871743221
0.001000000000000 -3.960792158430592
0.000100000000000 -3.960079201554833
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Kazmi,Maha

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 8.2000 9.4000 10.6000 11.8000 13.0000
```

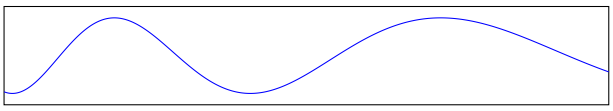
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

7.0000 8.2000 9.4000 10.6000 11.8000 13.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,13]

$$y = \sin^2 \frac{89}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 89 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5568 + 1.0914i
1.5568 - 1.0914i
-0.5257 + 1.7663i
-0.5257 - 1.7663i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{89 \arccos x}{100\sqrt{1-x}}$$

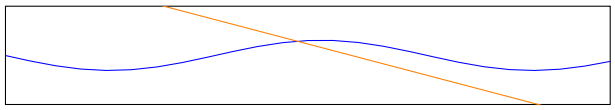
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.269382089861457
0.990000000000000 1.259701312587402
0.999000000000000 1.258754981624645
0.999900000000000 1.258660559498646
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 89$$

over the interval [11,14] on the same graph.

```
>> x = linspace(11,14);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 89$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{89}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{89}{x}$.

f.m

```
function y = f(x)
                                    ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.632653061224467
0.010000000000000 -3.567134268536875
0.001000000000000 -3.560712142430588
0.000100000000000 -3.560071201391679
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Khan,Ahsan

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 5.7500 7.5000 9.2500 11.0000
```

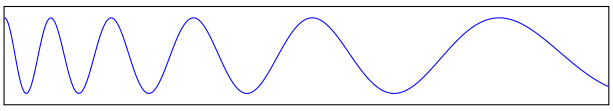
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 5.7500 7.5000 9.2500 11.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,11]

$$y = \sin^2 \frac{107}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 107 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6132 + 1.1325i
1.6132 - 1.1325i
-0.5472 + 1.8328i
-0.5472 - 1.8328i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{107 \arccos x}{100\sqrt{1-x}}$$

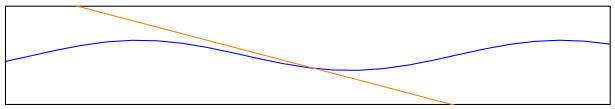
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.526111051855909
0.990000000000000 1.514472364571371
0.999000000000000 1.513334640829630
0.999900000000000 1.513221122093878
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 107$$

over the interval [14,17] on the same graph.

```
>> x = linspace(14,17);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 107$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{107}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{107}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.367346938775505
0.010000000000000 -4.288577154308725
0.001000000000000 -4.280856171238411
0.000100000000000 -4.280085601706673
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Krawiec,Eryk

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 6.0000 8.0000 10.0000 12.0000 14.0000
```

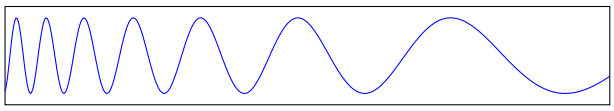
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 6.0000 8.0000 10.0000 12.0000 14.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,14]

$$y = \sin^2 \frac{125}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 125 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6624 + 1.1684i
1.6624 - 1.1684i
-0.5660 + 1.8908i
-0.5660 - 1.8908i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{125 \arccos x}{100\sqrt{1-x}}$$

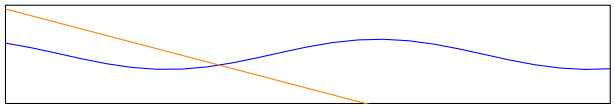
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.782840013850361
0.990000000000000 1.769243416555340
0.999000000000000 1.767914300034614
0.999900000000000 1.767781684689110
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 125$$

over the interval [17,20] on the same graph.

```
>> x = linspace(17,20);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 125$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{125}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{125}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.102040816326507
0.010000000000000 -5.010020040080220
0.001000000000000 -5.001000200042681
0.000100000000000 -5.000100001986140
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Lambert,Ashley

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

6.0000 11.5000 17.0000
```

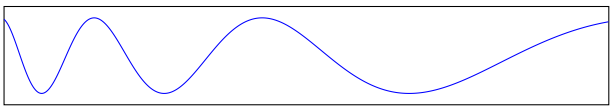
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

6.0000 11.5000 17.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [6,17]

$$y = \sin^2 \frac{84}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 84 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5396 + 1.0788i
1.5396 - 1.0788i
-0.5191 + 1.7459i
-0.5191 - 1.7459i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{84 \arccos x}{100\sqrt{1-x}}$$

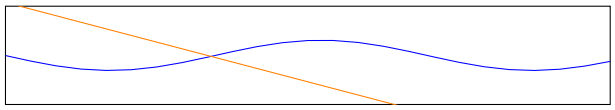
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.198068489307442
0.990000000000000 1.188931575925189
0.999000000000000 1.188038409623261
0.999900000000000 1.187949292111082
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 84$$

over the interval [11,14] on the same graph.

```
>> x = linspace(11,14);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 84$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{84}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{84}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.428571428571416
0.010000000000000 -3.366733466933880
0.001000000000000 -3.360672134427033
0.000100000000000 -3.360067201327865
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Lawal,Ishaq M

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 7.0000 10.0000
```

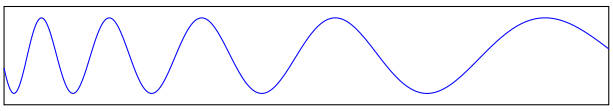
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 7.0000 10.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,10]

$$y = \sin^2 \frac{103}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 103 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6014 + 1.1239i
1.6014 - 1.1239i
-0.5427 + 1.8188i
-0.5427 - 1.8188i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{103 \arccos x}{100\sqrt{1-x}}$$

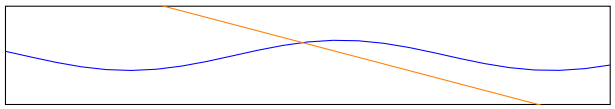
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.469060171412697
0.990000000000000 1.457856575241600
0.999000000000000 1.456761383228522
0.999900000000000 1.456652108183826
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 103$$

over the interval [13,16] on the same graph.

```
>> x = linspace(13,16);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 103$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{103}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{103}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.204081632653036
0.010000000000000 -4.128256513025973
0.001000000000000 -4.120824164832725
0.000100000000000 -4.120082401612989
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Mercedes,Janyah

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 12.5000 16.0000
```

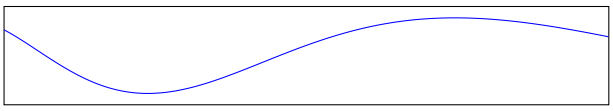
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

9.0000 12.5000 16.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,16]

$$y = \sin^2 \frac{67}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 67 = 0$.

```
>> format short
>> roots(                          )

ans =

1.4739 + 1.0310i
1.4739 - 1.0310i
-0.4940 + 1.6685i
-0.4940 - 1.6685i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{67 \arccos x}{100\sqrt{1-x}}$$

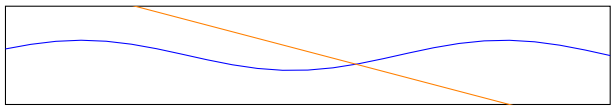
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.955602247423793
0.990000000000000 0.948314471273662
0.999000000000000 0.947602064818553
0.999900000000000 0.947530982993363
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 67$$

over the interval [8,11] on the same graph.

```
>> x = linspace( 8,11 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 67$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{67}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{67}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.734693877551013
0.010000000000000 -2.685370741482806
0.001000000000000 -2.680536107222408
0.000100000000000 -2.680053601054055
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Nyong,Daniel Eno

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

8.0000 10.2000 12.4000 14.6000 16.8000 19.0000
```

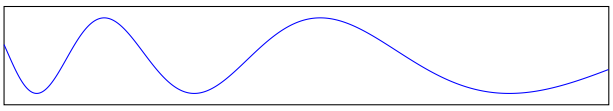
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

8.0000 10.2000 12.4000 14.6000 16.8000 19.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [8,19]

$$y = \sin^2 \frac{108}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 108 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6161 + 1.1346i
1.6161 - 1.1346i
-0.5483 + 1.8362i
-0.5483 - 1.8362i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{108 \arccos x}{100\sqrt{1-x}}$$

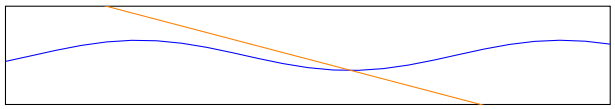
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.540373771966712
0.990000000000000 1.528626311903814
0.999000000000000 1.527477955229907
0.999900000000000 1.527363375571391
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 108$$

over the interval [14,17] on the same graph.

```
>> x = linspace(14,17);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 108$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{108}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{108}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.408163265306086
0.010000000000000 -4.328657314628969
0.001000000000000 -4.320864172836280
0.000100000000000 -4.320086401712330
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Pasquale,Steven Michael

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 5.7500 7.5000 9.2500 11.0000
```

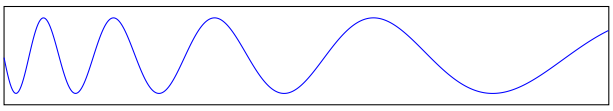
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 5.7500 7.5000 9.2500 11.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,11]

$$y = \sin^2 \frac{91}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 91 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5635 + 1.0963i
1.5635 - 1.0963i
-0.5282 + 1.7742i
-0.5282 - 1.7742i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{91 \arccos x}{100\sqrt{1-x}}$$

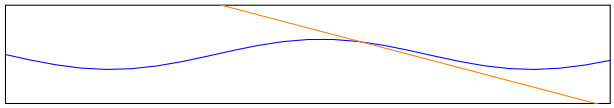
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.297907530083063
0.990000000000000 1.288009207252288
0.999000000000000 1.287041610425199
0.999900000000000 1.286945066453672
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 91$$

over the interval [11,14] on the same graph.

```
>> x = linspace(11,14);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 91$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{91}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{91}{x}$.

f.m

```
function y = f(x)
                                    ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.714285714285701
0.010000000000000 -3.647294589178428
0.001000000000000 -3.640728145629878
0.000100000000000 -3.640072801438520
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Peleshenko,Oksana

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 6.6000 8.2000 9.8000 11.4000 13.0000
```

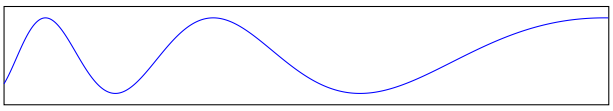
2. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

5.0000 6.6000 8.2000 9.8000 11.4000 13.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,13]

$$y = \sin^2 \frac{61}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 61 = 0$.

```
>> format short
>> roots(                          )

ans =

1.4475 + 1.0117i
1.4475 - 1.0117i
-0.4839 + 1.6374i
-0.4839 - 1.6374i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{61 \arccos x}{100\sqrt{1-x}}$$

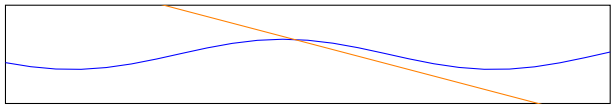
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.870025926758976
0.990000000000000 0.863390787279006
0.999000000000000 0.862742178416892
0.999900000000000 0.862677462128286
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 61$$

over the interval [7,10] on the same graph.

```
>> x = linspace( 7,10 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 61$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{61}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{61}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =      ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.489795918367346
0.010000000000000 -2.444889779559211
0.001000000000000 -2.440488097620985
0.000100000000000 -2.440048800984584
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Rosales,Gustavo

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

6.0000 6.8000 7.6000 8.4000 9.2000 10.0000
```

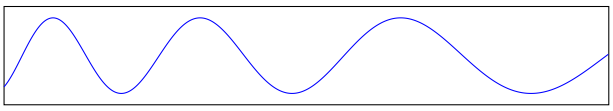
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

6.0000 6.8000 7.6000 8.4000 9.2000 10.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [6,10]

$$y = \sin^2 \frac{149}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 149 = 0$.

```
>> format short
>> roots(                          )

ans =

1.7199 + 1.2103i
1.7199 - 1.2103i
-0.5879 + 1.9586i
-0.5879 - 1.9586i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{149 \arccos x}{100\sqrt{1-x}}$$

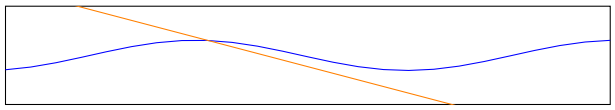
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 2.125145296509630
0.990000000000000 2.108938152533966
0.999000000000000 2.107353845641261
0.999900000000000 2.107195768149419
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 149$$

over the interval [20,23] on the same graph.

```
>> x = linspace(20,23);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 149$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{149}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{149}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -6.081632653061213
0.010000000000000 -5.971943887775310
0.001000000000000 -5.961192238448374
0.000100000000000 -5.960119202370605
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Sanusi,Babajide Habib

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 11.0000 13.0000 15.0000 17.0000 19.0000
```

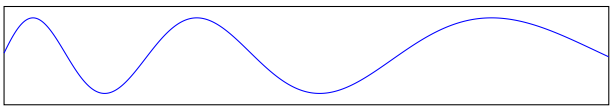
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

9.0000 11.0000 13.0000 15.0000 17.0000 19.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,19]

$$y = \sin^2 \frac{134}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 134 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6850 + 1.1848i
1.6850 - 1.1848i
-0.5746 + 1.9173i
-0.5746 - 1.9173i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{134 \arccos x}{100\sqrt{1-x}}$$

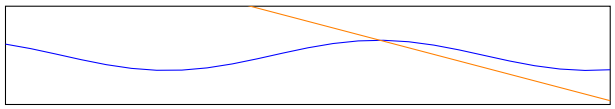
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.911204494847587
0.990000000000000 1.896628942547325
0.999000000000000 1.895204129637107
0.999900000000000 1.895061965986726
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 134$$

over the interval [17,20] on the same graph.

```
>> x = linspace(17,20);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 134$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{134}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{134}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.469387755102026
0.010000000000000 -5.370741482965612
0.001000000000000 -5.361072214444817
0.000100000000000 -5.360107202108110
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Shablovsky,Jason

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 8.4000 9.8000 11.2000 12.6000 14.0000
```

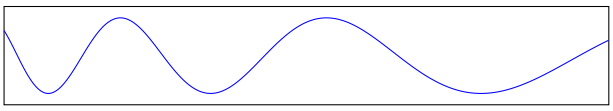
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

7.0000 8.4000 9.8000 11.2000 12.6000 14.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,14]

$$y = \sin^2 \frac{118}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 118 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6440 + 1.1550i
1.6440 - 1.1550i
-0.5589 + 1.8691i
-0.5589 - 1.8691i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{118 \arccos x}{100\sqrt{1-x}}$$

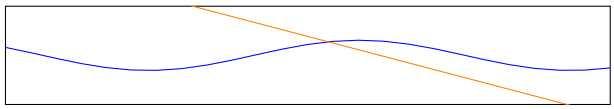
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.683000973074741
0.990000000000000 1.670165785228241
0.999000000000000 1.668911099232676
0.999900000000000 1.668785910346519
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 118$$

over the interval [15,18] on the same graph.

```
>> x = linspace(15,18);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 118$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{118}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{118}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.816326530612223
0.010000000000000 -4.729458917835315
0.001000000000000 -4.720944188836284
0.000100000000000 -4.720094401875484
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Shaheen,Hina

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

8.0000 10.5000 13.0000
```

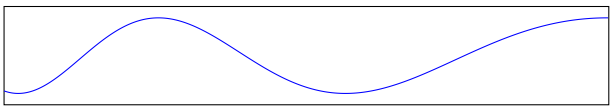
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

8.0000 10.5000 13.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [8,13]

$$y = \sin^2 \frac{102}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 102 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5984 + 1.1217i
1.5984 - 1.1217i
-0.5415 + 1.8153i
-0.5415 - 1.8153i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{102 \arccos x}{100\sqrt{1-x}}$$

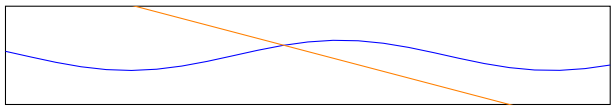
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.454797451301894
0.990000000000000 1.443702627909158
0.999000000000000 1.442618068828245
0.999900000000000 1.442509854706314
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 102$$

over the interval [13,16] on the same graph.

```
>> x = linspace(13,16);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 102$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{102}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{102}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -4.163265306122454
0.010000000000000 -4.088176352705374
0.001000000000000 -4.080816163234856
0.000100000000000 -4.080081601642859
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Shalodi,Majd

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 6.0000 8.0000 10.0000 12.0000 14.0000
```

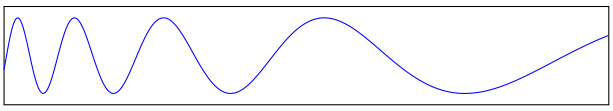
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 6.0000 8.0000 10.0000 12.0000 14.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval $[4,14]$

$$y = \sin^2 \frac{73}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 73 = 0$.

```
>> format short
>> roots(                          )

ans =

1.4984 + 1.0489i
1.4984 - 1.0489i
-0.5034 + 1.6975i
-0.5034 - 1.6975i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{73 \arccos x}{100\sqrt{1-x}}$$

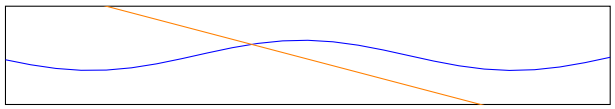
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.041178568088611
0.990000000000000 1.033238155268319
0.999000000000000 1.032461951220215
0.999900000000000 1.032384503858440
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 73$$

over the interval $[9,12]$ on the same graph.

```
>> x = linspace( 9,12 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 73$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{73}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{73}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.979591836734681
0.010000000000000 -2.925851703406756
0.001000000000000 -2.920584116823831
0.000100000000000 -2.920058401159053
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Shenouda,Andrew

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 10.5000 12.0000 13.5000 15.0000
```

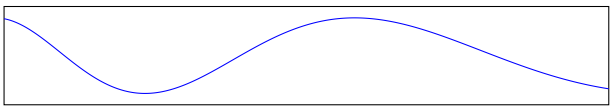
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

9.0000 10.5000 12.0000 13.5000 15.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,15]

$$y = \sin^2 \frac{98}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 98 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5861 + 1.1127i
1.5861 - 1.1127i
-0.5368 + 1.8008i
-0.5368 - 1.8008i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{98 \arccos x}{100\sqrt{1-x}}$$

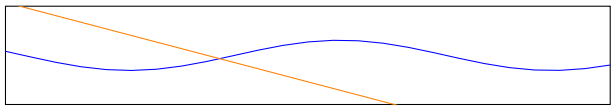
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.397746570858683
0.990000000000000 1.387086838579387
0.999000000000000 1.386044811227138
0.999900000000000 1.385940840796262
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 98$$

over the interval [13,16] on the same graph.

```
>> x = linspace(13,16);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 98$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{98}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{98}{x}$.

f.m

```
function y = f(x)
                                    ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.999999999999986
0.010000000000000 -3.927855711422622
0.001000000000000 -3.920784156832723
0.000100000000000 -3.920078401549175
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Stepanova,Maria

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 7.5000 10.0000 12.5000 15.0000
```

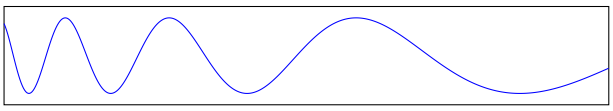
2. Fill in the blanks in the MATLAB screenshot.

```
>>      :      :

ans =

5.0000 7.5000 10.0000 12.5000 15.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,15]

$$y = \sin^2 \frac{85}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 85 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5431 + 1.0814i
1.5431 - 1.0814i
-0.5204 + 1.7501i
-0.5204 - 1.7501i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{85 \arccos x}{100\sqrt{1-x}}$$

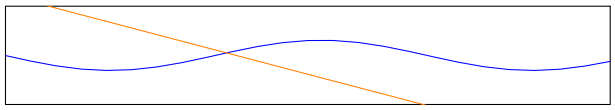
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.212331209418245
0.990000000000000 1.203085523257631
0.999000000000000 1.202181724023538
0.999900000000000 1.202091545588595
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 85$$

over the interval [11,14] on the same graph.

```
>> x = linspace(11,14);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 85$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{85}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{85}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.469387755102034
0.010000000000000 -3.406813627254479
0.001000000000000 -3.400680136028455
0.000100000000000 -3.400068001369049
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Suffiullah,Muhammad

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 6.2000 8.4000 10.6000 12.8000 15.0000
```

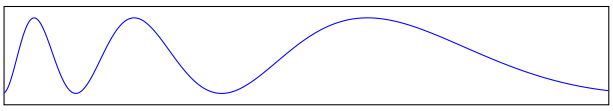
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 6.2000 8.4000 10.6000 12.8000 15.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,15]

$$y = \sin^2 \frac{50}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 50 = 0$.

```
>> format short
>> roots(                              )

ans =

1.3932 + 0.9721i
1.3932 - 0.9721i
-0.4632 + 1.5734i
-0.4632 - 1.5734i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{50 \arccos x}{100\sqrt{1-x}}$$

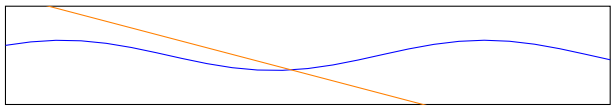
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 0.713136005540144
0.990000000000000 0.707697366622136
0.999000000000000 0.707165720013846
0.999900000000000 0.707112673875644
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 50$$

over the interval [6,9] on the same graph.

```
>> x = linspace( 6,9 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 50$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{50}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{50}{x}$.

f.m

```
function y = f(x)
                                    ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.040816326530610
0.010000000000000 -2.004008016032088
0.001000000000000 -2.000400080016007
0.000100000000000 -2.000040000798009
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Thomas,Michael A

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

5.0000 8.5000 12.0000
```

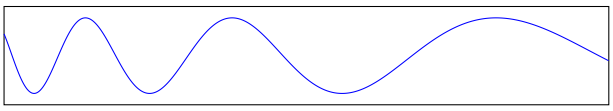
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

5.0000 8.5000 12.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [5,12]

$$y = \sin^2 \frac{84}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 84 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5396 + 1.0788i
1.5396 - 1.0788i
-0.5191 + 1.7459i
-0.5191 - 1.7459i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{84 \arccos x}{100\sqrt{1-x}}$$

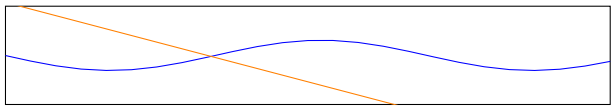
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.198068489307442
0.990000000000000 1.188931575925189
0.999000000000000 1.188038409623261
0.999900000000000 1.187949292111082
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 84$$

over the interval [11,14] on the same graph.

```
>> x = linspace(11,14);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 84$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{84}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{84}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.428571428571416
0.010000000000000 -3.366733466933880
0.001000000000000 -3.360672134427033
0.000100000000000 -3.360067201327865
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Wu,Jiamin

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 5.8000 7.6000 9.4000 11.2000 13.0000
```

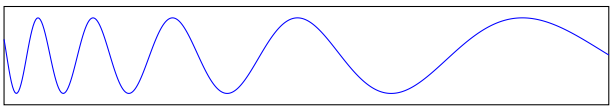
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 5.8000 7.6000 9.4000 11.2000 13.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [4,13]

$$y = \sin^2 \frac{92}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 92 = 0$.

```
>> format short
>> roots(                          )

ans =

1.5668 + 1.0987i
1.5668 - 1.0987i
-0.5295 + 1.7781i
-0.5295 - 1.7781i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{92 \arccos x}{100\sqrt{1-x}}$$

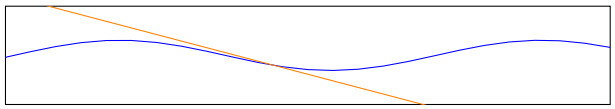
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.312170250193866
0.990000000000000 1.302163154584730
0.999000000000000 1.301184924825476
0.999900000000000 1.301087319931185
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 92$$

over the interval [12,15] on the same graph.

```
>> x = linspace(12,15);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 92$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{92}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{92}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.755102040816318
0.010000000000000 -3.687374749499027
0.001000000000000 -3.680736147231300
0.000100000000000 -3.680073601479704
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Xie,Miaoqin

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

9.0000 9.2500 9.5000 9.7500 10.0000
```

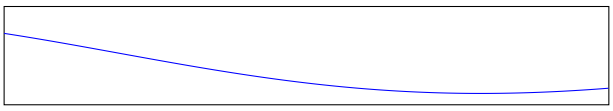
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

9.0000 9.2500 9.5000 9.7500 10.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [9,10]

$$y = \sin^2 \frac{123}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                              ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 123 = 0$.

```
>> format short
>> roots(                          )

ans =

1.6573 + 1.1646i
1.6573 - 1.1646i
-0.5640 + 1.8847i
-0.5640 - 1.8847i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{123 \arccos x}{100\sqrt{1-x}}$$

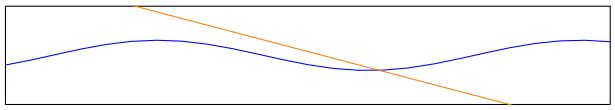
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.754314573628755
0.990000000000000 1.740935521890455
0.999000000000000 1.739627671234061
0.999900000000000 1.739497177734084
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 123$$

over the interval [16,19] on the same graph.

```
>> x = linspace(16,19);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 123$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{123}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{123}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -5.020408163265273
0.010000000000000 -4.929859719438666
0.001000000000000 -4.920984196839838
0.000100000000000 -4.920098401939298
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Zaalishvili,Alex

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

4.0000 5.6000 7.2000 8.8000 10.4000 12.0000
```

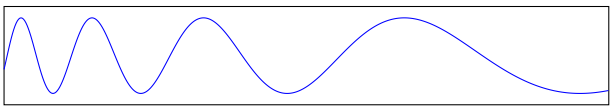
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

4.0000 5.6000 7.2000 8.8000 10.4000 12.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval $[4,12]$

$$y = \sin^2 \frac{73}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 73 = 0$.

```
>> format short
>> roots(                              )

ans =

1.4984 + 1.0489i
1.4984 - 1.0489i
-0.5034 + 1.6975i
-0.5034 - 1.6975i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{73 \arccos x}{100\sqrt{1-x}}$$

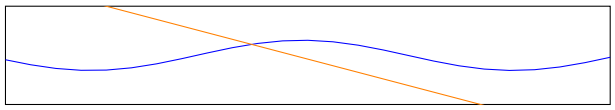
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 1.041178568088611
0.990000000000000 1.033238155268319
0.999000000000000 1.032461951220215
0.999900000000000 1.032384503858440
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 73$$

over the interval $[9,12]$ on the same graph.

```
>> x = linspace( 9,12 );
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 73$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{73}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{73}{x}$.

f.m

```
function y = f(x)
                                    ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -2.979591836734681
0.010000000000000 -2.925851703406756
0.001000000000000 -2.920584116823831
0.000100000000000 -2.920058401159053
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

Zaidi,Qumber

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(      ,      ,      )

ans =

7.0000 8.2500 9.5000 10.7500 12.0000
```

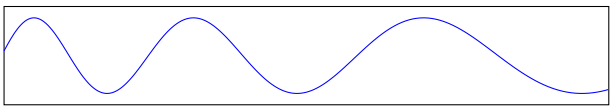
2. Fill in the blanks in the MATLAB screenshot.

```
>>       :      :

ans =

7.0000 8.2500 9.5000 10.7500 12.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,12]

$$y = \sin^2 \frac{148}{x}$$

```
>> x = linspace(      ,      ,1000);
>> y =                                ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 148 = 0$.

```
>> format short
>> roots(                          )

ans =

1.7177 + 1.2087i
1.7177 - 1.2087i
-0.5871 + 1.9559i
-0.5871 - 1.9559i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{148 \arccos x}{100\sqrt{1-x}}$$

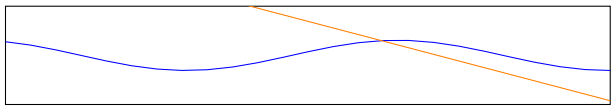
```
>> format long
>> x =                                ;
>> y =                                ;
>> [x;y]'

ans =

0.900000000000000 2.110882576398827
0.990000000000000 2.094784205201523
0.999000000000000 2.093210531240984
0.999900000000000 2.093053514671906
0.999990000000000
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 148$$

over the interval [19,22] on the same graph.

```
>> x = linspace(19,22);
>> f =                                ;
>> g =                                ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 148$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{148}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{148}{x}$.

f.m

```
function y = f(x)
                                   ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =       ;
>> h =                                ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -6.040816326530560
0.010000000000000 -5.931863727454711
0.001000000000000 -5.921184236846953
0.000100000000000 -5.920118402329421
0.000010000000000
```

2020 Fall Math 229 Exam 1 - Due 11.8

REVIEW SHEET VERSION

1. Fill in the blanks in the MATLAB screenshot.

```
>> linspace(        ,        ,        )

ans =

7.0000 8.2000 9.4000 10.6000 11.8000 13.0000
```

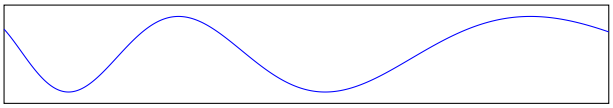
2. Fill in the blanks in the MATLAB screenshot.

```
>>         :        :        

ans =

7.0000 8.2000 9.4000 10.6000 11.8000 13.0000
```

3. Fill in the blanks in the MATLAB screenshot, where we plot over the interval [7,13]

$$y = \sin^2 \frac{96}{x}$$

```
>> x = linspace(        ,        ,1000);
>> y =                                    ;
>> plot(x,y)
```



4. Find the real solution to $4x^5 - x^4 + 96 = 0$.

```
>> format short
>> roots(                              )

ans =

1.5797 + 1.1081i
1.5797 - 1.1081i
-0.5344 + 1.7933i
-0.5344 - 1.7933i
              + 0.0000i
```

5. Make a limit table with 5 rows to estimate

$$\lim_{x \to 1^-} \frac{96 \arccos x}{100\sqrt{1-x}}$$

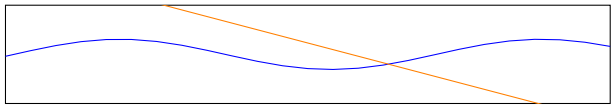
```
>> format long
>> x =                                    ;
>> y =                                    ;
>> [x;y]'

ans =

0.900000000000000 1.369221130637077
0.990000000000000 1.358778943914501
0.999000000000000 1.357758182426584
0.999900000000000 1.357656333841236
0.999990000000000                       
```

6. Fill in the blanks in the MATLAB screenshot, where we plot the left and right sides of the equation

$$2\cos(3x) = -7x + 96$$

over the interval [12,15] on the same graph.

```
>> x = linspace(12,15);
>> f =                                    ;
>> g =                                    ;
>> plot(x,f,x,g)
```



7. Using the graph you produce in Question 6, estimate the solution to $2\cos(3x) = -7x + 96$ to 1 decimal place.

$x =$

Let $f(x) = \dfrac{96}{x}$ for questions 8 and 9

8. Make a function file for $f(x) = \dfrac{96}{x}$.

f.m

```
function y = f(x)
                                       ;
```

9. Estimate $f'(-5)$ by making a limit table with 5 rows.

```
>> format long
>> clear f
>> x =         ;
>> h =                                    ;
>> [h; (f(x+h)-f(x))./h]'

ans =

0.100000000000000 -3.918367346938751
0.010000000000000 -3.847695390781424
0.001000000000000 -3.840768153633433
0.000100000000000 -3.840076801537861
0.000010000000000                       
```